

III. Remarks

A. Status of the Claims and Support for Language of Amended Claims

Claims 1-7 are cancelled since they are to non-elected inventions. Claims 8, 10, 12, 14, 16, and 17 are amended. Claims 20-24 are added. Claims 9, 11, 13, and 15 are withdrawn as being directed to non-elected species. Claims 8-24 are pending.

Support for the language of the amended claims is found throughout the specification and in the original claims. Specifically, support for the amino acids of Claim 8 is found on page 14, paragraph 54, page 38, paragraph 101, and in Tables II to X. Support for new claim 20 is found on page 37, paragraph 92. Support for new claim 21 is found on page 28, paragraph 80. Support for new claims 22 and 23 is found in original claims 18 and 19 and in claim 14. Support for claim 24 is found on page 14, paragraph 54, and page 38, paragraph 101.

B. Election/Restrictions

The group III invention has been elected. The restriction requirement was made final by the Office Action. The Office Action cites MPEP §803.02 regarding a statement that unity of invention exists where compounds included within a Markush group share a common utility and share a substantial structural feature disclosed as being essential to that utility. Applicant has therefore cancelled non-elected subject matter from Claim 16 for filing in a continuation application.

Claim 8 has been amended to set forth correct Markush format by changing "or" to --and--. Also, Claim 8 sets forth compounds included within a Markush group that share a common utility and share a substantial structural feature disclosed as being essential to that utility, i.e., that of having a carboxyl and an amino group capable of complexing with copper and that targets cells of an angiogenic tissue. Accordingly, Applicants submit that unity of invention as defined in §MPEP 803.02 exists with respect to Claim 8 and that Claim 8 should therefore be examined fully with respect to the elected species and further to the extent necessary to determine patentability.

Further, according to MPEP §803.02, if a Markush-type claim, such as Claim 8, is not allowable over the prior art, examination will be limited to the Markush-type claim and claims to the elected species, with claims drawn to species patentably distinct from the elected species withdrawn from further consideration. On the other hand, if no prior art is found that anticipates or renders obvious the elected

species, the search of the Markush-type claim will be extended. Specifically, the prior art search is extended to the extent necessary to determine patentability of the Markush-type claim. MPEP §803.02.

Applicants submit that the withdrawal from consideration of Claims 9, 11, 13, and 15 is premature and request that the withdrawal be reversed upon allowability of the elected species of dipeptide. Applicants submit that, in such case, §MPEP 803.02 requires that the non-elected species set forth in the Markush claim as well as Claims 9, 11, 13 and 15 are then to be examined for patentability.

C. Claim Objections

The Office Action states that Claims 8 and 16 are objected to because the claims contain the non-elected invention.

Response

Non-elected inventions of Claim 16 have been removed from the claim for filing in a divisional application. Claim 8 has not been amended at this time for the reasons set forth above concerning the guidelines for examination of Markush claims set forth in MPEP §803.02. In view of the foregoing comments, Applicants respectfully request that the objection to Claims 8 and 16 be withdrawn.

D. Rejection of Claims 8 and 12 under 35 USC §102(b)

Office Action

Claims 8 and 12 are rejected under 35 USC §102(b) over U.S. Patent No. 6,017,888 to Pallenberg *et al.*, (“Pallenberg ‘888”) and by Arena *et al.* (J. Inorg. Biochem. 50:31-45, 1993) (Arena).

Response

For a prior art reference to anticipate a claim, every element of the claim must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Applicants submit that every element of Claims 8 and 12 is not shown in each of Pallenberg ‘888 and Arena.

Pallenberg ‘888 requires that the second amino acid from the terminus of a peptide having at least two amino acids chelated to copper is histidine, arginine, or a derivative thereof (see col. 2, lines 26-28; col. 3, lines 38-41; and col. 7, lines 58-60). Contrary to Pallenberg ‘888, Claim 8 is directed to an anti-angiogenic compound consisting essentially of two units complexed to a copper metal ion, wherein said units are independently selected from the group consisting of an amino acid, a dipeptide consisting of two amino acids, wherein each amino acid is independently selected from the group consisting of Ala, Asp, Glu, Gly, Pro, Thr, Val, Leu, Ile, Lys, Ser, Gln and Trp, and an analog thereof which has a carboxyl and an amino group capable of complexing with copper and that targets cells of an angiogenic tissue.

Pallenberg '888 does not disclose or suggest a dipeptide consisting of two amino acids, wherein each amino acid is selected from the group consisting of Ala, Asp, Glu, Gly, Pro, Thr, Val, Leu, Ile, Lys, Ser, Gln and Trp. Therefore, Claim 8 is patentable over Pallenberg '888 and it is requested that the rejection of Claim 8 over Pallenberg '888 be withdrawn.

Contrary to Arena, Claim 8 is directed to an anti-angiogenic compound consisting essentially of two units complexed to a copper metal ion, wherein said units are independently selected from the group consisting of an amino acid, a dipeptide consisting of two amino acids, wherein each amino acid is independently selected from the group consisting of Ala, Asp, Glu, Gly, Pro, Thr, Val, Leu, Ile, Lys, Ser, Gln and Trp, and an analog thereof which has a carboxyl and an amino group capable of complexing with copper and that targets cells of an angiogenic tissue. Arena does not disclose or suggest "consisting essentially of two units complexed to a copper metal ion, wherein said units are ... a dipeptide consisting of two amino acids, wherein each amino acid is selected from the group consisting of Ala, Asp, Glu, Gly, Pro, Thr, Val, Leu, Ile, Lys, Ser, Gln and Trp." Instead, Table 5 of Arena discloses one unit of a dipeptide complexed with copper (ratio peptide/Cu = 1:1). Therefore, Claim 8 is patentable over Arena and it is requested that the rejection of Claim 8 over Arena be withdrawn.

Since Claim 12 is dependent upon Claim 8 and includes the subject matter of Claim 8, Claim 12 is patentable over Pallenberg '888 or Arena for at least the same reasons as noted above with respect to Claim 8.

In view of the foregoing, Applicants respectfully request that the rejections under USC §102(b) be withdrawn.

E. Rejection of Claims 8, 12 and 16-19 under 35 USC §103

Office Action

Claims 8, 12, and 16-19 were rejected under 35 USC §103 over Arena in view of U.S. Patent No. 6,383,522 to Dupont ("Dupont '522").

Response

Applicants submit that independent Claim 8 is patentable over the combination of Arena in view of Dupont '522.

The Federal Circuit has required that specific support must be found in the prior art that "suggests" or "teaches" the modification necessary to resolve the differences between the prior art and a

claimed invention. *In re Grabiak*, 226 USPQ 870 (Fed. Cir. 1985). Further, quoting from *Yamanouchi Pharmaceutical Co. v. Danbury Pharmacal Inc.* 56 USPQ2d 1641 (Fed. Cir. 2000): “Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner [or accused infringer] to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. ... To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness (citing *In re Rouffet*, 149 F.3d 1350, 1357-58, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998).”

As the Office Action states at page 5, lines 7-8, “Arena *et al.* do not disclose the composition comprises an anti-tumor agent.” Further, contrary to Dupont ‘522, Claim 8 is directed to an anti-angiogenic compound consisting essentially of two units complexed to a copper metal ion, wherein said units are independently selected from the group consisting of an amino acid, a dipeptide consisting of two amino acids, wherein each amino acid is independently selected from the group consisting of Ala, Asp, Glu, Gly, Pro, Thr, Val, Leu, Ile, Lys, Ser, Gln and Trp, and an analog thereof which has a carboxyl and an amino group capable of complexing with copper and that targets cells of an angiogenic tissue. Dupont ‘522 does not disclose or suggest two units complexed to a copper metal ion, wherein said units are independently selected from the group consisting of an amino acid, a dipeptide consisting of two amino acids, wherein each amino acid is independently selected from the group consisting of Ala, Asp, Glu, Gly, Pro, Thr, Val, Leu, Ile, Lys, Ser, Gln and Trp. Applicants submit that neither Arena or Dupont ‘522 provides the specific support that teaches or suggests the modification necessary to resolve the differences with the claimed invention and, even if combined, the combination of Arena and Dupont ‘522 does not teach or suggest the presently claimed invention. Further, Arena does not teach or suggest that copper complexes of Arena are anti-angiogenic.

Since Claims 12, and 16-19 are directly or indirectly dependent upon Claim 8, and since Claim 8 is believed to be patentable over the combination of Arena and Dupont ‘522, Claims 12 and 16-19 are also believed to be patentable over the combination. Therefore, Applicants respectfully request that the rejection of Claims 8, 12, and 16-19 over Arena in view of Dupont ‘522 be withdrawn.

F. Claims 10 and 14 Objections

Office Action

The Office Action states that Claims 10 and 14 would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims.

Response

Claim 10 has been rewritten in independent form. Claim 14 is indirectly dependent upon Claim 8. Since Claim 8 is believed to be allowable, Claim 14 is believed to be allowable also.

G. Conclusion

The present paper is believed to be a complete response to the Official Action mailed May 5, 2003. Reconsideration is respectfully requested. Should this response be considered inadequate or non-responsive for any reason, or should the Examiner have any questions, comments or suggestions that would expedite the prosecution of the present case to allowance, Applicant's undersigned representative earnestly requests a telephone conference at (512) 867-8528.

Respectfully submitted,



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